ing to us samples obtained in circumstances that strongly suggest the possibility that the specimen is from an unknown animal. Obviously this does not mean that every piece of hair found on a bush or a barbed-wire fence should be submitted for analysis, and any specimen should be accompanied by a full report indicating where and when found and the reasons for believing that it is worthy of further investigation. The identification of hairs is not an easy job, and we are most grateful to Fred Ulmer for taking the time to perform this very tedious operation.

## IVAN T. SANDERSON'S RECONSTRUCTION OF THE SASQUATCH

The drawing opposite and that of the Yeti or Meh-teh, which will be printed in our January 1975 issue, were done by Ivan Sanderson in 1970. We are sorry we cannot reproduce these in color, but the cost is prohibitive. The notes that follow were written by Mr. Sanderson to accompany color Polaroid photographs of the two drawings which were sent to several of his scientific colleagues for their comments and were also made available to the designers of the Strange, Strange World pavillion at Man and His World (formerly EXPO) in Montreal.

### Composite Reconstructions of Sasquatch and Yeti.

by Ivan T. Sanderson

These drawings, done to scale in color, represent a compendium of all the reports that we know of by alleged eye witnesses of both of these creatures, plus the brief film footage disseminated by Mr. Roger Patterson of a Sasquatch in California, and facts obtained by Dr. Bernard Heuvelmans and myself during the examination of the specimen preserved in ice, which was for several years exhibited by Mr. Frank Hansen of Minnesota. These sketches were developed from scale drawings of the bodies, without hair and/or fur covering.

There is, to me, something very extraordinary about these reconstructions; but quite apart from the now no longer deniable fact that there are several types of what we have called generally "abominable snowmen" (or ABSMs for short) but that the original ABSM (now commonly miscalled the Yeti, which is actually the Meh-teh) is a rock-climbing ape, while all the others appear to be primitive hominids. The really strange thing, however, is as follows.

Whatever I do by way of reconstruction —and staying strictly with what the people who allege they have encountered these creatures say, plus what we have in the form of alleged physical evidence— these creatures come out as shown. Frankly, while the composite of the Yeti seems to make good zoological sense, that of the Sasquatch (i.e. Bigfoot, Hun-Guressu, or Dzu-teh) looks to me utterly 'ridiculous'. No wonder not only sceptics but those anthropologists sincerely interested in the matter said that Roger Patterson's film looked like "a man in a monkey suit" [no one has ever come up with any proof that the film is not genuine]. There have been those who have drawn or modeled their conceptions of this Sasquatch but all appear to have made it much too bestial and much more like the Yeti. It now transpires that the Sasquatch is in every way a hominid but that (as seen in the original specimen that was exhibited by Hansen [not the model exhibited after April 1969]) it has some very specialized characteristics. Most notable among these are facial. First, the face is naked and there is no beard, but a thick submandibular fringe [under, not on, the chin]. Second, there is no brow ridge; third, the nose is excessively retroussée and the nares (nostrils) point straight forward; fourth, in place of a mustache there appear to be a few sparse, stiff hairs on either side above the angle of the jaw and then a vertical line of much smaller but more profuse bristle-like hairs running up the septum from the top of the upper lip almost to the tip of the nose.

The other extraordinary feature described by everybody is that while there appear to be no eyebrows, the hair across the forehead forms a forward, upward, and backward curling fringe. Upon this point old Mr. Ostman [kidnapped by a Sasquatch] was most insistent and we have his original sketches. While the torso is extraordinarily massive, its dimensions can be matched by modern human beings of all races but in particular professions such as wrestling, freight moving, and so forth. It turns out further that neither the arms nor the legs are either excessively long nor excessively short, though it does appear that the hands are very large. The final and perhaps most interesting fact that emerges from this analysis is that the feet of the Sasquatch would appear to be exactly in proportion to their stature. However, there is now cumulative evidence that their feet are short but very broad but that their toes are extremely long and webbed up to the proximal end of each phalange.

I cannot refrain from stating once more that I think the poor Sasquatch looks utterly 'ridiculous', and as two professional artists, one an ex-Walt Disney cartoonist, said on viewing it: "It's altogether too theatrical". I agree; but in any endeavour such as this one cannot deviate either way from what facts we have. It would be very easy to, on the one hand, dramatize this reconstruction, or on the other hand to make it look even more human than it is. However, I am afraid we are stuck with this, even if it does look like a huge and robust Mongol wearing a peaked cap and a fur coat!

Incidentally, the outline of the head of the Sasquatch, fully furred or haired, is quite different from the outline of its skull without any hair. John Napier was the most insistent on the incongruity of the sort of peak on the top of the head of whatever it was that was shown in Roger Patterson's film, pointing out that as the thing had very large breasts it would appear to be a female but that no known female ape

IVAN T. SANDERSON.
1970.
SASQUATCH - CANADA.
"BIGFOOT" -- CALIFORNIA.
HUN-GURESU - CHINA.
DZU-TEH - - - TIBET.

or monkey has a sagittal crest on its occiput. However, several of the African Mangabeys have such crests in both sexes but consisting of hair without a bony ridge beneath. We must therefore assume that if the creature in Mr. Patterson's film and the sketches made by Mr. Ostman represent reality, the curious peaked form of the head of the Sasquatch as seen in profile is due to the way in which the head hair grows.

## THE PATTERSON FILM: AN ANALYSIS

(The following is the official report on the 1967 (Gimlin-Patterson) film footage of a Sasquatch/Bigfoot, compiled and written by Dmitri D. Donskoy, Chief of the Chair of Biomechanics, Physical Culture Institute of the USSR, Moscow, USSR.)

As a result of the repeated viewings of the walk of the two footed creature in the 1967 film and detailed examination of the successive stills from it, one is left with the impression of a fully spontaneous and highly efficient pattern of locomotion shown therein, with all the particular movements combined in an integral whole which presents a smoothly operating and coherent system.

In all the strides the movements of the upper limbs (they can be called arms) and of the lower limbs (legs) are well coordinated. A forward swing of the right arm, for example, is accompanied with that of the left leg, which is called cross-limb coordination, which is a must for man and natural for many patterns of locomotion in quadrupeds. (In walking and trotting, for instance.)

The strides are energetic and big, with the leg swung far forward. When man extends his leg that far he walks very fast and thus overcomes by momentum the "breaking effect" of the virtual prop that is provided by the leg put forward. Momentum is proportional to mass and speed, so, the more massive the biped the less speed (and vice versa) is needed to overcome the breaking effect of legs in striding.

The arms move in swinging motions. This means that the muscles are exerted at the beginning of each cycle after which they relax and the movement continues by momentum. The character of arm movements indicates that the arms are massive and the muscles strong.

After each heel strike the creature's leg bends, taking on the full weight of the body and smoothing over the impact of the step, acting as a shock absorber. During this "phase" certain muscles of the leg are extended and become tense in preparation for the subsequent toe-off. In normal human walk such considerable knee flexion as exhibited by the creature (in the film) is not observed and is practised only in cross-country skiing. This characteristic makes one think that the creature is very heavy. Its toe-off is powerful and this contributes to rapid progression.

In the swinging of the leg considerable flexion is observed in the joints, with different parts of the limb lagging behind each other. The movement of the foot is behind that of the shank, which in turn is behind that of the hip. This kind of movement is peculiar to massive limbs with well relaxing muscles. In the case of massive limbs the movements look fluid and easy, with no breaks or jerks in the extreme points of each cycle. The creature (in the film) uses to great advantage the effect of muscle resilience. This is not normally used by modern men under normal conditions.

The gait of the creature (in the footage) is confident and the strides are regular. There is no sign of any loss of balance or any wavering. No redundant movements are visible. In the two strides during which the creature makes a turn to the right, in the direction of the camera, the movement is accomplished with a turn of the torso. This reveals alertness and, possibly, a somewhat limited mobility of the head. (In certain critical situations man also turns his whole torso and not just his head alone.) During the turn (to the right) the creature (in the footage) spreads the arms widely to increase stability.

In the toe-off phase the sole of the creature's foot is visible. By human standards it is large for the height of the creature. No longitudinal arch typical of the human foot is in view. The hind part of the foot formed by the heel bone (calcaneous) protrudes considerably back. Such anatomical proportions (of the foot) facilitate the work of the muscles that make standing postures possible and increase the force of propulsion in walking. Lack of an arch may be caused by the great weight of the creature.

Since the creature is manlike and bipedal its gait resembles in principle the gait of modern man. But all of its movements indicate that its weight is much greater, its muscles (especially) much stronger and its walk swifter than that of man. The movements (of the filmed creature) are harmonious and repeated uniformly from step to step, a provision of "synergy", i.e., the combined operation of a whole group of muscles.

Lastly we can observe certain characteristics of the creature's walk which defy actual description. These could be described as "expressiveness of movements". In man this quality is manifest in a goal-oriented sporting or labour activity which impresses one with an economy (and accuracy) of movement. This characteristic can be noted by an experienced observer even if he does not know the specific given activity. "What needs to be done is neatly done" (with economy and efficiency) is another way of describing "expressiveness of movement." In the particular case (the creature in the footage) the motor system characterized by this quality is well adapted to the task that it is called upon to perform. In other words neat perfection is typical of those movements which through regular use have become habitual and automatic.

On the whole the most important thing (in the footage) is the consistency of all of the above-

feel that it is something that ought to be looked into.

Our observations did not include Laurel Mountain or the region between the two ridges. We simply did not have enough time, men, or equipment to do so this time, but a start has been made.

The practical result was the experience gained in organizing, planning, and equipping such an expedition. We are already working on plans for future expeditions. Further research and additional equipment are needed, and participation by other SITU members is encouraged, though potential volunteers must realize that such an expedition is not just "a nice hike in the woods"!

I should like to put on record our thanks to both the people and the governmental agencies in Westmoreland County who were, in every case, both hospitable and helpful, but especially to Stan Gordon and the WCUFOSG for their considerable help during our stay in Pennsylvania.

As promised, here is Ivan T. Sanderson's reconstruction of the Yeti or Meh-teh, the 'original' so-called Abominable Snowman. The reconstruction of the Sasquatch or Bigfoot was included in our October 1974 issue, together with Ivan Sanderson's notes on the reconstructions. He had little to say of the Yeti except that the reconstruction makes "good zoological sense".